

## Number Sense Exam 103, 2/14/2021

- (1)  $11 \times 146 =$  \_\_\_\_\_
- (2)  $92\% =$  \_\_\_\_\_ (proper fraction)
- (3) Which is smaller:  $-\frac{11}{13}$  or  $-\frac{9}{11}$ ? \_\_\_\_\_
- (4)  $103\frac{3}{5}\% =$  \_\_\_\_\_ (decimal)
- (5)  $1 + 3 + 7 + 7 + 11 + 13 =$  \_\_\_\_\_
- (6)  $1421 + 594 =$  \_\_\_\_\_
- (7)  $2008 \div 25 =$  \_\_\_\_\_ (decimal)
- (8)  $\frac{1}{16} =$  \_\_\_\_\_ (decimal)
- (9)  $46^2 =$  \_\_\_\_\_
- \*(10)  $54619 + 3905 + 789 =$  \_\_\_\_\_
- (11) Which is larger:  $-\frac{5}{6}$  or  $-\frac{6}{7}$ ? \_\_\_\_\_
- (12)  $1.5 \times 5.2 =$  \_\_\_\_\_
- (13)  $7 + (-5) - (3) - (-1) =$  \_\_\_\_\_
- (14) If 1 gram = .04 oz., 36 oz = \_\_\_\_\_ grams.
- (15)  $221 \times 14 =$  \_\_\_\_\_
- (16)  $\frac{1}{4}$  ton is equivalent to \_\_\_\_\_ ounces
- (17)  $34^2 =$  \_\_\_\_\_
- (18) The mode of 8, 4, 6, 3, 8, 4, 9, 4 is \_\_\_\_\_
- (19)  $4 + 12 + 20 + 28 + \dots + 44 =$  \_\_\_\_\_
- \*(20)  $902111 \div 2019 =$  \_\_\_\_\_
- (21)  $3\frac{1}{4} \times 2\frac{3}{5} =$  \_\_\_\_\_ (mixed number)
- (22)  $(111)(91)(k) = 70707$ , then  $k =$  \_\_\_\_\_
- (23)  $4^{3/2} =$  \_\_\_\_\_
- (24)  $\text{MMVI} \times \text{XI} =$  \_\_\_\_\_ (Arabic Numeral)
- (25) Find the slope of the line  $2x - 3y = 1$ . \_\_\_\_\_
- (26)  $13^2 + 39^2 =$  \_\_\_\_\_
- (27) 3.5 pints = \_\_\_\_\_ quarts
- (28)  $9\frac{3}{4} \times 4\frac{1}{3} =$  \_\_\_\_\_ (mixed number)
- (29)  $(-27)^{\frac{1}{3}} =$  \_\_\_\_\_
- \*(30)  $215316 \div 2016 =$  \_\_\_\_\_
- (31)  $97 \times 89 =$  \_\_\_\_\_
- (32)  $1 + 1 + 2 + 3 + 5 + 8 + \dots + 89 + 144 =$  \_\_\_\_\_
- (33) If  $3x + 4 = 5$ , then  $x^2 =$  \_\_\_\_\_
- (34)  $3\frac{2}{5} - 2\frac{2}{3} =$  \_\_\_\_\_
- (35)  $15^2 + 45^2 =$  \_\_\_\_\_
- (36) If  $2x - 3 = x + 5$ , then  $x =$  \_\_\_\_\_
- (37) If  $4x - 5 = 11$ , then  $6x + 1 =$  \_\_\_\_\_
- (38)  $5 \times 5! + 35 \times 4! =$  \_\_\_\_\_
- (39)  $245_9 \div 7_9 =$  \_\_\_\_\_ 9
- \*(40)  $29 \times 127 + 31 \times 213 =$  \_\_\_\_\_
- (41)  $(4.4)^2 \div (2.2)^2 \times (1.1)^2 =$  \_\_\_\_\_
- (42)  $\frac{5!}{6! + 4!} =$  \_\_\_\_\_
- (43)  $503 \times 1111 =$  \_\_\_\_\_
- (44) If  $(2, 3)$  is the midpoint of the line segment with endpoints  $(-4, 7)$  and  $(8, y)$ , then  $y =$  \_\_\_\_\_
- (45)  $41_5 - 24_5 - 13_5 =$  \_\_\_\_\_ 5
- (46) If a set has 3 proper subsets, then it has \_\_\_\_\_ elements in the set.
- (47) If  $n^6 = 1728$  then  $n^4 =$  \_\_\_\_\_

- (48)  $64 \div .25 =$  \_\_\_\_\_
- (49) If  $3x - 2y = 4$  and  $x + 2y = 3$ , then  $x =$  \_\_\_\_\_
- \*(50)  $\sqrt{6543210} =$  \_\_\_\_\_
- (51) If  $(2 - 3i)(3 - 2i) = a + bi$ , then  $a =$  \_\_\_\_\_
- (52)  $\frac{4}{9} - \frac{2}{3} + 1 - \frac{3}{2} + \dots =$  \_\_\_\_\_
- (53)  $(4 - 2i) \div i = a + bi$  and  $a =$  \_\_\_\_\_
- (54) If  $(4 + 3i) \div (2i) = a + bi$ , then  $a =$  \_\_\_\_\_
- (55)  $3^9 \div 8$  has a remainder of \_\_\_\_\_
- (56) The sum of the  $x$ -intercepts of  $f(x) = 2(x - 3)^2 - 8$  is \_\_\_\_\_
- (57) If  $\frac{7!}{5!} = \frac{(x + 2)!}{(x + 1)!}$ , then  $x =$  \_\_\_\_\_
- (58)  $3\frac{1}{5} \times 10\frac{2}{3} =$  \_\_\_\_\_ (mixed number)
- (59) The number of distinct diagonals of a convex decagon is \_\_\_\_\_
- \*(60)  $58333 \div 777 \times 75 =$  \_\_\_\_\_
- (61) The smallest integral value of  $x$  such that  $|2x - 3| \leq 4$  is \_\_\_\_\_
- (62) If  $9^{(2x-1)} = 3^{(x+2)}$ , then  $x =$  \_\_\_\_\_
- (63)  $(10 + 7)^2 + (10^2 - 7^2) =$  \_\_\_\_\_
- (64) Change  $0.3444\dots_7$  to a base 10 fraction. \_\_\_\_\_
- (65)  $12^6 \div 5$  has a remainder of \_\_\_\_\_
- (66)  $\sin\left(\frac{7\pi}{6}\right) + \cos^2\left(\frac{11\pi}{6}\right) + \tan\left(\frac{9\pi}{4}\right) =$  \_\_\_\_\_
- (67)  $\frac{4}{7} - \frac{15}{29} =$  \_\_\_\_\_
- (68)  $2^2 + 1^2 + 3^2 + 4^2 + 7^2 + 11^2 =$  \_\_\_\_\_
- (69) If  $(\sqrt[3]{x^5})(\sqrt{x^3}) = (\sqrt[n]{x^k})$ , where  $n$  and  $k$  are relatively prime, then  $k =$  \_\_\_\_\_
- \*(70)  $31.4 \times 27.2 \times 16.2 =$  \_\_\_\_\_
- (71)  $4 \sin\left(\frac{3\pi}{4}\right) \cos\left(\frac{3\pi}{4}\right) =$  \_\_\_\_\_
- (72) The slope of the tangent to  $x^2 + y^2 = 25$  at  $(4, 3)$  is \_\_\_\_\_
- (73) Change  $.555\dots_8$  to a base 8 fraction. \_\_\_\_\_
- (74)  $\int_1^2 (2x - 1) dx =$  \_\_\_\_\_
- (75) If  $f(x) = \frac{(2x + 3)}{5}$ , then  $f^{-1}(3) =$  \_\_\_\_\_
- (76) Let  $f(x) = \frac{x^2}{6} + \frac{x}{3} + 1$ . Find  $f'(-2)$ . \_\_\_\_\_
- (77) The sum of the radii of the circumscribed circle of a 9, 40, 41 right triangle is \_\_\_\_\_ units
- (78) Let  $f(x) = \frac{5x - 4}{3} - 2$ . Find  $f^{-1}(-1)$ . \_\_\_\_\_
- (79)  $(33_5) \times (4_5) =$  \_\_\_\_\_ <sub>5</sub>
- \*(80) 47.2 miles = \_\_\_\_\_ feet